

12-3-96

## EXHIBIT B

## Bali Floating Point Representation

This document defines the 16-bit floating point format stored in pixel and texel memory known as "s10e5". Internal variations used inside the R chip pipeline known as "s11e5" and "s15e5" have 11 or 15 mantissa bits instead of the 10 shown here.

Readers may notice some similarity to the IEEE floating point standard :-)



| Value                                 | Conditions                             |
|---------------------------------------|--|
| $(-1)^s \times 2^{(e-15)} \times 1.m$ | $0 < e < 31$                           |
| zero                                  | $e == 0$ , all values of m and s       |
| positive infinity                     | $e == 31$ , $s == 0$ , all values of m |
| negative infinity                     | $e == 31$ , $s == 1$ , all values of m |

excess 15 (bias = 15)  
 $\beta = 2$

As an example, the value (-1.25) is represented by  $s=1$ ,  $m=0100000000$  (binary),  $e=01111$  (binary).

Note that denormalized numbers are not supported. Underflows are forced to zero; overflows are clamped to positive or negative infinity.

Have to convert from IEEE 32 bit float to this in convert/merge block.